

Please return this card, indicating receipt date and Serial No., if applicable, of the following
Information Disclosure Statement, PTO-1449 and Copies of
References

Applicant(s): Kouichi MATSUDA et al.
Title: CONTROL SYSTEM FOR CHARGING BATTERIES AND
ELECTRONIC APPARATUS USING SAME
Serial No.: 09/548,213
Filing Date: April 12, 2000
Docket No.:
Due Date:

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Serial No.: 09/548,213
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Kouichi MATSUDA et al.

Application No.: 09/548,213

Filed: April 12, 2000

CPA Filing Date (if applicable): N/A

Group Art Unit: 2838

Examiner: To be assigned

For: CONTROL SYSTEM FOR CHARGING BATTERIES AND ELECTRONIC APPARATUS USING SAME

Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

In accordance with the duty of disclosure provisions of 37 CFR §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the subject application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ Form PTO-1449.
- 1b. ☒ Copies of IDS citations. (If box not checked, see Item 6, below)
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or a PCT International Search Report.
- 1d. ☒ English language translation (complete or relevant portion(s)) attached to each non-English language publication.
- 1e. ☐ Explanations of Relevancy of References (ATTACHMENT 1(e), hereto) for providing a concise explanation of each non-English publication.
- 1f. ☐ List of Copending Applications (ATTACHMENT 1(f), hereto).

2. ☒ This Information Disclosure Statement is filed under 37 CFR §1.97(b):

(Check either Item 2a or 2b or 2c)

- 2a. ☒ before the latter of three (3) months after the U.S. patent application filing date or before the first Office Action on the merits therein; or
- 2b. ☐ before the latter of three (3) months after the continued prosecution application (CPA) filing date or before the first Office Action on the merits therein.

- 2c. ☐ with/after the filing of a Request for Continued Examination (RCE) and before the first Office Action on the merits therein.

Accordingly, no fee or § 1.97(e) Statement is required.

3. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(c) after the first Office Action on the merits, but before a Final Office Action or a Notice of Allowance.

(Check either Item 3a or 3b; Item 3b to be checked if any reference known for more than 3 months)

- 3a. ☐ The §1.97(e) Statement in Item 5 below is applicable. Accordingly, no fee is required.

- 3b. ☐ The \$240.00 fee set forth in 37 CFR §1.17(p) in accordance with 37 CFR §1.97(c) is:
☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

4. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(d) after the Final Office Action or the Notice of Allowance, but before payment of the Issue Fee.

The § 1.97(e) Statement (Item 5 below) is applicable.

A Petition to the Commissioner is hereby made under 37 CFR §1.97(d) to request consideration of this Information Disclosure Statement. The \$130.00 fee set forth in 37 CFR §1.17(i) is:

- ☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

5. ☐ Statement under § 1.97(e) (*applicable if Item 3a or Item 4 is checked*)

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 CFR §1.97(e)(1), it is stated that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. (Federal Register, Vol. 62, No. 197, page 53190, October 1997.)

- 5b. ☐ In accordance with 37 CFR §1.97(e)(2), it is stated that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known by any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. (Federal Register, Vol. 62, No. 197, page 53190, October 1997.)

6. ☐ This is a continuation/divisional/continuation-in-part application under 37 CFR §1.53(b).

(Check appropriate Items 6a and/or 6b)

- 6a. ☐ Copies of the publications listed on the attached Form PTO-1449 which were previously cited in prior application Serial No. _____, filed on _____, of which this application claims priority under 35 U.S.C. §120, have been omitted pursuant to 37 CFR §1.98(d).

- 6b. ☐ Copies of the publications listed on the attached Form PTO-1449 which were not previously cited in prior application Serial No. _____, filed on _____, of which this application claims priority under 35 U.S.C. §120, are provided herewith.

7. ☐ This is a continuation/divisional application under 37 CFR §1.53(d).

(Check either Item 7a or 7b)

7a. ☐ The Issue Fee has not been paid.

7b. ☐ A Petition to Withdraw from issue under 37 CFR §1.313(b)(5) is filed concurrently herewith or has been granted. A continuation application under 37 CFR §1.53(d) after payment of the Issue Fee is proper in accordance with 37 CFR §1.53(d)(1)(ii).

8. ☐ This is a Supplemental Information Disclosure Statement.

(Check either Item 8a or 8b)

8a. ☐ This Supplemental Information Disclosure Statement under 37 CFR §1.97(f) supplements the Information Disclosure Statement filed on _____. A bona fide attempt was made to comply with 37 CFR §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental IDS can be considered as if properly filed on _____.

8b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of the Notice under 37 CFR §1.97(i), mailed _____. (MPEP 609, Form ¶ 6.51, July 1997.)

9. ☐ In accordance with 37 CFR §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:

(Check appropriate Items 9a, 9b, 9c and/or 9d)

9a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office. (See U.S. Patent & Trademark Office's authorization in the Federal Register, Vol. 57, No. 12, January 17, 1992, at page 2031 (Reply to Comment 68).)

9b. ☐ set forth in the application.

9c. ☐ satisfied because an English language translation (complete or relevant portion(s)) is attached to each non-English language publication.

9d. ☐ enclosed as Attachment 1(e), hereto.

10. No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than search report(s) from a counterpart foreign application or a PCT International Search Report, if submitted herewith). 37 CFR §§ 1.97(g) and (h).

11. The Commissioner is authorized to credit any overpayment or charge any additional fee required under 37 CFR §1.17 for this Information Disclosure Statement and/or Petition to Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Dated: August 1, 2000

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Washington, D.C. 20001

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Mark J. Henry

Registration No. 36,162

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY DOCKET NO. 122.1203-RE	APPLICATION NO. 09/548,213
LIST OF REFERENCES CITED BY APPLICANT <i>(Use several sheets if necessary)</i>		FIRST NAMED INVENTOR Kouichi MATSUDA et al.	
		FILING DATE April 12, 2000	GROUP ART UNIT 2838

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	BA	5,150,031	9/22/92	James et al.			
	BB	5,191,277	3/2/93	Ishikura et al.			
	BC	5,307,002	4/26/94	Ho et al.			
	BD	5,349,282	9/20/94	McClure			
	BE	5,355,073	10/11/94	Nguyen			
	BF	5,371,456	12/6/94	Brainard			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	BG	7-37621	2/7/95	Japan			X	
	BH	7-170665	7/4/95	Japan			X	
	BI	6-54466	2/25/94	Japan			X	
	BJ	3-107339	5/7/91	Japan			Abstract	
	BK	7-506238	7/6/95	Japan				X
	BL	6-176797	6/24/94	Japan			Abstract	

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	BM	"1996 Linear Databook Volume V", <u>LINEAR TECHNOLOGY</u> , 1996, pp. 1-37, 1-1-1-6, 2-1 and 4-370-4-387 (with index).
	BN	"Constant-Current/Constant-Voltage 3A Battery Charger with Input Current Limiting", <u>LINEAR TECHNOLOGY</u> LT 1511, July 1996, pp. 1-16.

EXAMINER	DATE CONSIDERED
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	CA	5,382,893	1/17/95	Dehnel			
	CB	5,545,969	8/13/96	Hasegawa			
	CC	5,465,039	11/7/95	Narita et al.			
	CD	5,198,743	3/30/93	McClure et al.			
	CE	5,563,496	10/8/96	McClure			
	CF	5,723,970	3/3/98	Bell			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	CG	6-176798	6/24/94	Japan			Abstract	
	CH	6-176799	6/24/94	Japan			Abstract	
	CI	6-113477	4/22/94	Japan			Abstract	
	CJ	63-305721	12/13/88	Japan			Abstract	
	CK	3-27413	2/5/91	Japan			Abstract	
	CL	3-27414	2/5/91	Japan			Abstract	

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	CM	Randy Flatness et al., "New LTC 1435-LTC 1439 DC/DC Controllers Feature Value and Performance", <u>LINEAR TECHNOLOGY MAGAZINE</u> , Vol. VI, No. 1, February 1996, pp. 1-40
	CN	"1.5A and 3A Fast Charger ICs Charge All Battery Types Including Lithium-Ion", <u>LINEAR TECHNOLOGY CRONICLE</u> , Vol. 5, No. 3, March 1996, pp. 1-4.

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	DA	4,384,214	5/17/83	Crick et al.			
	DB	4,843,299	6/27/89	Hutchings			
	DC	4,885,523	12/5/89	Koenck			
	DD	5,150,032	9/22/92	Ho			
	DE	5,418,445	5/23/95	Alpert et al.			
	DF	5,561,361	10/1/96	Sengupta et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	DG	3-27416	2/5/91	Japan			Abstract	
	DH	3-27417	2/5/91	Japan			Abstract	
	DI	4-178122	6/25/92	Japan			Abstract	
	DJ	WO 9307557A1	4/15/93	PCT			Abstract	
	DK							
	DL							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	DM	"3V Micropower 12-Bit A/D Converter with 4-Channel Input Multiplexer in Narrow 16-Lead Surface Mount Package", LINEAR TECHNOLOGY CRONICLE, Vol. 5, No. 5, May 1996, pp. 1-4.
	DN	"12-Bit Micropower Voltage Output Digital-to-Analog Converters in SSOP Package Have Excellent DNL", LINEAR TECHNOLOGY CRONICLE, Vol. 5, No. 6, June 1996, pp. 1-4.

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*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	EA	5,049,804	9/17/91	Hutchings			
	EB	4,455,523	6/19/84	Koenck			
	EC	4,553,081	11/12/85	Koenck			
	ED	4,709,202	11/24/87	Koenck			
	EE	4,716,354	12/29/87	Hacker			
	EF	4,737,702	4/12/88	Koenck			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION	
							YES	NO
	EG							
	EH							
	EI							
	EJ							
	EK							
	EL							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	EM	Carl Nelson, "Fused Lead Battery Charger ICs Need No Heat Sinks, Design Note 124", <u>LINEAR TECHNOLOGY DESIGN NOTES</u> , March 1996, pp. 1-2.
	EN	

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	FA	4,845,419	7/4/89	Hacker			
	FB	4,961,043	10/2/90	Koenck			
	FC	5,278,487	1/11/94	Koenck			
	FD	5,363,031	11/8/94	Miller et al.			
	FE	5,463,305	10/31/95	Koenck			
	FF	5,508,599	4/16/96	Koenck			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION	
							YES	NO
	FG							
	FH							
	FI							
	FJ							
	FK							
	FL							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	FM	
	FN	

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	GA	5,619,117	4/8/97	Koenck			
	GB	5,696,435	12/9/97	Koenck			
	GC	5,856,737	1/5/99	Miller et al.			
	GD	5,883,492	3/16/99	Koenck			
	GE	5,883,493	3/16/99	Koenck			
	GF	5,889,386	3/30/99	Koenck			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION	
							YES	NO
	GG							
	GH							
	GI							
	GJ							
	GK							
	GL							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	GM	
	GN	

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*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	HA	5,629,604	5/13/97	Sengupta et al.			
	HB	5,541,490	7/30/96	Sengupta et al.			
	HC	5,838,141	11/17/98	Sengupta et al.			
	HD	5,847,546	12/8/98	Sengupta et al.			
	HE	5,883,497	3/16/99	Turnbull			
	HF	5,698,964	12/16/97	Kates et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION	
							YES	NO
	HG							
	HH							
	HI							
	HJ							
	HK							
	HL							

OTHER REFERENCES *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	HM	
	HN	

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	IA	5,239,495	8/24/93	Nanno et al.			
	IB	5,523,670	6/4/96	Ninomiya			
	IC	5,532,524	7/2/96	Townsley et al.			
	ID	5,532,935	7/2/96	Ninomiya et al.			
	IE	5,383,140	1/17/95	Nanno et al.			
	IF	5,581,772	12/3/96	Nanno et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	IG							
	IH							
	II							
	IJ							
	IK							
	IL							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	IM	
	IN	

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	JA	5,939,862	8/17/99	Kates et al.			
	JB	5,493,199	2/20/96	Koenck et al.			
	JC						
	JD						
	JE						
	JF						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	JG							
	JH							
	JI							
	JJ							
	JK							
	JL							

OTHER REFERENCES *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	JM	
	JN	

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